Fluid Physics and Transport Branch (RUF)

Research is conducted on fluid physics and transport phenomenon using the unique attributes of the space environment. This research is aimed at developing technologies to enable closed-loop life support and other spacecraft systems through understanding of the underlying physical processes that involve sensitivity to gravity, multiphase flows, and heat and mass transport. Flight hardware is developed for ISS and other space platforms to conduct carefully designed experiments to elucidate the effects of low gravity on multiphase flows and complex fluids. The experiment results are used to develop models and technologies for Advanced Life Support Systems; In situ Resource Utilization; and other spacecraft technologies and systems.